Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently amended) A method of identifying microseismic events generated by hydrocarbon extraction activities in seismic data, the seismic data comprising at least first seismic data traces acquired at a first seismic receiver and second seismic data traces acquired at a second receiver spatially separated from the first receiver, the method comprising:

positioning the first and the second seismic receivers in a borehole, wherein the first and the second seismic receivers are vertically separated in the borehole~~.~~;

identifying a potential doublet in the first seismic trace by determining ~~an overall~~ a first measure of similarity for a pair of microseismic events in the first seismic ~~traces,~~trace;

using characteristics of the potential doublet to identify a corresponding potential doublet in the second seismic trace, wherein the corresponding potential doublet comprises a pair of microseismic events in the second seismic trace;

determining a second measure of similarity between the pair of microseismic events in the second seismic trace;

determining an overall measure of similarity, wherein the overall measure of similarity ~~being~~ is indicative of similarity between the pair of microseismic events acquired at the first seismic receiver and of similarity between the pair of microseismic events acquired at the second seismic receiver; and

using the overall measure of similarity to identify the microseismic events.

2. (Original) A method as claimed in claim 1 wherein the method is a real-time processing method.

3. (Original) A method as claimed in claim 1 wherein the overall measure of similarity is an overall correlation coefficient indicative of correlation between the events acquired at the first seismic receiver and of correlation between the events acquired at the second seismic receiver.

4. (Currently amended) A method as claimed in claim 3 wherein determining the overall ~~cross correlation~~ correlation coefficient comprises:

(a) determining a first correlation coefficient for the pair of microseismic events ~~from the first data~~ acquired at the first seismic receiver;

(b) determining a second correlation coefficient for the pair of microseismic events ~~from the second data~~ acquired at the second seismic receiver; and

(c) determining the overall correlation coefficient ~~for the pair of events~~ from the first correlation coefficient and the second correlation coefficient.

5. (Currently amended) A method as claimed in claim 1 and comprising the further step of comparing the overall measure of similarity ~~for the pair of events~~ with a first pre-determined threshold.

6. (Currently amended) A method as claimed in claim 5 and comprising the further step of identifying the ~~pair of microseismic events~~ potential doublet as a doublet if the overall measure of similarity is equal to or greater then the first predetermined threshold.

7. (Currently amended) A method as claimed in claim 4, wherein the first seismic receiver is a multi-component seismic receiver, and step (a) comprises:

(i) determining respective correlation coefficients for the pair of microseismic events acquired at the first seismic receiver for each data component acquired by the first seismic receiver; and

(ii) determining the first correlation coefficient for the pair of microseismic events acquired at the first seismic receiver from the respective correlation coefficients.

8. (Original) A method as claimed in claim 7 wherein step (i) comprises determining the respective correlation coefficients in the frequency domain.

9. (Previously presented) A method as claimed in claim 7 wherein step (ii) comprises determining the first correlation coefficient as a weighted average of the respective correlation coefficients.

10. (Currently amended) A method as claimed in claim 4, wherein the second seismic receiver is a multi-component seismic receiver, and step (b) comprises:

(i) determining respective correlation coefficients for the pair of seismic events acquired at the second seismic receiver for each data component acquired by the second seismic receiver; and

(ii) determining the second correlation coefficient for the pair of seismic events acquired at the first seismic receiver from the respective correlation coefficients for each data component acquired by the second seismic receiver.

11. (Original) A method as claimed in claim 10 wherein step (i) comprises determining the respective correlation coefficients in the frequency domain.

12. (Previously presented) A method as claimed in claim 10 wherein step (ii) comprises determining the second correlation coefficient as a weighted average of the respective correlation coefficients for each data component acquired by the second seismic receiver.

13. (Currently amended) A method as claimed in claim 4, wherein step (c) comprises determining the overall correlation coefficient ~~for the pair of events~~ as an average of the first correlation coefficient for the pair of events acquired at the first seismic receiver and the second correlation coefficient for the pair of events acquired at the first seismic receiver.

14. (Currently amended) A method as claimed in claim 13 and comprising determining the overall correlation coefficient ~~for the pair of events~~ according to:

$$C(\tau) = \max_{\tau_i} \left\{ \frac{\sum_{l=1}^{m} C_{Rl}(\tau_i)}{m} \right\}$$

where $C_{Ri}$ is ~~the~~ a cross-correlation coefficient for ~~the~~ a pair of events for ~~the~~ an $i^{th}$ receiver, $\tau_i \in (\tau_l - \Delta t, \tau_l + \Delta t)$, for $l = 1,\ldots m$ and $m$ is the number of receivers.

15. (Previously presented) A method of seismic data acquisition comprising: acquiring first seismic data at a first seismic receiver and simultaneously acquiring second seismic data at a second seismic receiver spatially separated from the first seismic receiver; and processing the first and second seismic data according to a method as defined in claim 1.

16-24 (Canceled)